

In the Claims:

1. (Canceled.)
2. (Canceled.)
3. (Canceled.)
4. (Canceled.)
5. (Canceled.)
6. (Canceled.)
7. (Canceled.)
8. (Canceled.)
9. (Canceled.)
10. (Canceled.)
11. (New.) A process for the biological treatment of an effluent in order to purify it, comprising a first treatment of the majority of said effluent in a first step of anaerobic biological treatment by the way of a biomass is fixed onto a mobile support, giving a first effluent, the biomass present in the first step comprising at least sulfate-reducing bacteria, followed by a second treatment of the majority of the first effluent, in a second step of anoxic biological treatment, by the way of a fixed biomass, giving a second effluent, the biomass present in the second step comprising at least sulfur-oxidizing bacteria, and finally a third treatment of the majority of the second effluent in a third step of aerobic biological treatment, by the way of a fixed biomass, giving a third purified effluent, the biomass present in the third step comprising at least nitrifying bacteria, wherein the process also comprises recycling of some of the effluent present in the third step into the second step.
12. (New.) The process as claimed in claim 11, wherein the majority of the effluent to be treated in said process is screened, decanted, or screened and decanted, in a step prior to the first treatment process.

13. (New.) The process as claimed in claim 11, wherein the majority of the third effluent derived from the said process is decanted.
14. (New.) The process as claimed in claim 11, wherein the second step of the anoxic treatment is a treatment by the way of a biomass fixed onto a mobile support or onto a fixed support.
15. (New.) The process as claimed in claim 11, such that the third step of the aerobic treatment is a treatment by the way of a biomass fixed onto a mobile support or onto a fixed support.
16. (New.) The process as claimed in claim 11, comprising the use of a device comprising a first treatment reactor, comprising a biomass fixed onto a mobile support, followed by a second anoxic treatment reactor, comprising a fixed biomass, and finally a third aerobic treatment reactor, comprising a fixed biomass, and also a conduit for transporting effluent to the first reactor, a conduit for transporting the first effluent from the first to the second reactor, a conduit for transporting the second effluent from the second to the third reactor, and a conduit for removing effluent from the third reactor, said device also comprising at least one means for recycling from the third reactor to the second reactor.
17. (New.) The process as claimed in claim 11, comprising the use of a device comprising a first treatment reactor, comprising a biomass fixed onto a mobile support, followed by a second anoxic treatment reactor, comprising a fixed biomass, and finally a third aerobic treatment reactor comprising a biomass, and also a conduit for transporting effluent to the first reactor, a conduit for transporting the first effluent from the first to the second reactor, a conduit for transporting the second effluent from the second to the third reactor, and a conduit for removing effluent from the third reactor, said device also comprising at least one means for recycling from the third reactor to the second reactor, wherein the first reactor comprises at least one mixing means.
18. (New.) The process as claimed in claim 11, comprising the use of a device comprising a first treatment reactor, comprising a biomass fixed onto a mobile support, followed by a second anoxic treatment reactor, comprising a fixed biomass, and finally a third aerobic treatment reactor comprising a biomass, and also a conduit for transporting

effluent to the first reactor, a conduit for transporting the first effluent from the first to the second reactor, a conduit for transporting the second effluent from the second to the third reactor, and a conduit for removing effluent from the third reactor, said device also comprising at least one means for recycling from the third reactor to the second reactor, wherein the second reactor comprises at least one mixing means.

19. (New.) The process as claimed in claim 11, comprising the use of a device comprising a first treatment reactor, comprising a biomass fixed onto a mobile support, followed by a second anoxic treatment reactor, comprising a fixed biomass, and finally a third aerobic treatment reactor comprising a biomass, and also a conduit for transporting effluent to the first reactor, a conduit for transporting the first effluent from the first to the second reactor, a conduit for transporting the second effluent from the second to the third reactor, and a conduit for removing effluent from the third reactor, said device also comprising at least one means for recycling from the third reactor to the second reactor, wherein the third reactor comprises at least one mixing means.
20. (New.) The process as claimed in claim 11, comprising the use of a device comprising a first treatment reactor, comprising a biomass fixed onto a mobile support, followed by a second anoxic treatment reactor, comprising a fixed biomass, and finally a third aerobic treatment reactor comprising a fixed biomass, and also a conduit for transporting effluent to the first reactor, a conduit for transporting the first effluent from the first to the second reactor, a conduit for transporting the second effluent from the second to the third reactor, and a conduit for removing effluent from the third reactor, said device also comprising at least one means for recycling from the third reactor to the second reactor, wherein the third reactor comprises at least one aeration means.- - -